



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,027	12/02/2003	Andrew Christian Dahlgren	00758.1421USU1	4454

57557 7590 10/30/2006

PAULY, DEVRIES SMITH & DEFFNER, L.L.C.

P.O. BOX 2960

MINNEAPOLIS, MN 55402-2960

EXAMINER

PARSONS, THOMAS H

ART UNIT PAPER NUMBER

1745

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,027	DAHLGREN ET AL.	
	Examiner	Art Unit	
	Thomas H. Parsons	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

(Previous) Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14 **stand** rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/22234 in view of Applicants' Specification as evidenced by Donaldson Product Guidelines and Specification.

Claim 1: WO 02/22234 in Figure 1 discloses a fuel cell assembly comprising:

(a) a portable fuel cell having a cathode in fluid connection with an oxidant intake port and an anode (page 2, lines 11-19);

(b) a filter assembly positioned in fluid connection with the oxidant intake port and the cathode, the filter assembly comprising: (i) at least one of a particulate removal feature and a chemical adsorbent feature; and

(c) the filter assembly constructed and configured in the fuel cell so that oxidant, entering via the intake port, passes through the filter assembly, (page 2, line 30 through page 3, line 11; page 16, lines 1-32, see also page 4, line 15 through page 15, line 30).

WO 02/22234 does not disclose a filter assembly further comprising a water buffer feature constructed and configured so that water vapor, from the cathode, is managed by the water buffer feature to achieve a desired humidity level.

Art Unit: 1745

The Applicants on page 18, line 22 through page 19, line 5 disclose a commercially available filter assembly comprising a particulate removal, chemical adsorbent, and a water buffer feature constructed and configured so that water vapor, from the cathode, is managed by the water buffer feature to achieve a desired humidity level. See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the filter assembly with the filter assembly of the Applicants' specification because both are concerned with filtering particulates and gases from incoming air, and the Applicants teach a commercially available filter assembly that would have provided protection from particulates, hydrocarbons, acid gases, and the effects of water vapor such as condensation and corrosion, and would have controlled humidity thereby improving the overall performance, efficiency and life of the fuel cell.

Claim 2: The rejection is as set forth above in claim 1 wherein the Applicants' specification further discloses that the filter assembly comprises both the particulate removal feature and the chemical adsorbent feature (page 18, line 22 through page 19). See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Claim 3: The rejection of claim 3 is as set forth above in claims 1 and 2 wherein the Applicants' specification further discloses a filter assembly comprising one portion having the particulate removal feature, the chemical adsorbent feature and the water buffer feature therein (page 18, line 22 through page 19). See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Art Unit: 1745

Claim 4: The rejection of claim 4 is as set forth above in claims 1-3 wherein the Applicants' specification further discloses a filter assembly comprising a housing, with the particulate removal feature, the chemical adsorbent feature and the water buffer feature retained in the housing (page 18, line 22 through page 19). See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Claim 5: The rejection of claim 5 is as set forth above in claim 1-4 wherein the Applicants' specification further discloses a housing defining at least a portion of a diffusion channel (page 18, line 22 through page 19). See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Claim 6: The rejection of claim 6 is as set forth above in claims 1-2 wherein the Applicants' specification further discloses a filter assembly comprises one portion having the particulate removal feature (filter membrane) and a second portion having the chemical adsorbent feature (adsorbent tablet) and the water buffer feature (diffusion channel) therein (page 18, line 22 through page 19). See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Claim 7: The rejection of claim 7 is as set forth above in claim 1 wherein the Applicants' specification further discloses that the particulate removal feature is a membrane (filter membrane) (page 18, line 22 through page 19). See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Claim 8: The rejection of claim 8 is as set forth above in claims 1 and 7 wherein the Applicants' specification further discloses that the membrane is PTFE (page 18, line 22 through page 19). See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Art Unit: 1745

Claim 9: The rejection of claim 9 is as set forth above in claims 1 and 7 wherein the Applicants' specification further discloses that the membrane is PVDF (page 9, line 3 through lines 20). See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Claim 10: The rejection of claim 10 is as set forth above in claim 1 wherein the Applicants' specification further discloses a chemical adsorbent feature comprising activated carbon (page 18, line 22 through page 19). See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Claim 11: The rejection of claim 11 is as set forth above in claims 1 and 10 wherein the Applicants' specification further discloses that the chemical adsorbent feature comprises impregnated activated carbon (page 18, line 22 through page 19). See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Claim 12: WO 02/22234 on page 1, lines 11-19 discloses that the fuel cell is operably connected to electronic equipment to provide power to the electronic equipment.

Claim 13: WO 02/22234 on page 1, lines 11-19 discloses that the electronic equipment is one of a cell phone, personal computing device, or a lap top computer.

Claim 14: WO 02/22234 discloses a fuel cell operably connected to an electronic equipment (e.g. a cell phone) which is the same as that instantly defined as a portable fuel cell. Accordingly, the portable fuel cell of the WO combination would have a weight of no greater than 2 kg.

3. Claims 15-20 **stand** rejected under 35 U.S.C. 103(a) as being unpatentable over Herdeg et al. (6,403,243) in view of Applicants' specification.

Claim 15: Herdeg et al. in Figure 1 disclose a fuel cell assembly comprising:

Art Unit: 1745

(a) a portable (i.e. mobile as per col. 4: 50-54), direct methanol fuel cell (abstract and col. 2: 54-58) comprising:

- (i) a cathode (col. 1: 17-48);
 - (ii) an anode (col. 1: 17-48); and
 - (iii) a liquid methanol source (fuel tank) in fluid contact with the anode, the methanol retained in a compartment having a vent, the vent providing fluid contact (via line 21) between an interior of the compartment and an exterior of the compartment; and
- (b) a filter assembly positioned with the vent (via line 21), the filter assembly configured for fluid connection between the interior of the compartment and the exterior of the compartment (col. 2: 39-43 and col. 5: 42-47).

Herdeg et al. do not disclose a filter assembly within a vent and comprising a selectively permeable hydrophobic and/or oleophobic feature.

The Applicants on page 18, line 5 through 20 and page 20, lines 4-5 disclose a commercially available filter assembly disposed within a vent and comprising a selectively permeable hydrophobic and/or oleophobic feature (PTFE). See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the filter assembly with the filter assembly of the Applicants' specification because both are concerned with filtering particulates and gases from incoming air, and the Applicants teach a commercially available filter assembly that would have provided protection from particulates, hydrocarbons, acid gases, and the effects of water vapor

Art Unit: 1745

such as condensation and corrosion, and would have controlled humidity thereby improving the overall performance, efficiency and life of the fuel cell.

Claim 16: The rejection of claim 16 is as set forth above in claim 15 wherein the Applicants' specification further discloses that the selectively permeable hydrophobic and/or oleophobic feature is a membrane (PTFE membrane) (page 18, line 5 through 20 and page 20, lines 4-5). See also See also Product Guidelines & Specifications Adsorbent Breather Filter (ABF).

Claim 17: The rejection of claim 17 is as set forth above in claims 15 and 16 wherein the Applicants' specification further discloses that the membrane is PTFE (page 18, line 5 through 20 and page 20, lines 4-5). See also See also Product Guidelines & Specifications Adsorbent Breather Filter (ABF).

Claim 18: The rejection of claim 18 is as set forth above in claims 15 and 16 wherein the Applicants' specification further discloses that the membrane is PVDF (page 9, line 3 through lines 20). See also Product Guidelines & Specifications Adsorbent Breather Filter (ABF).

Claim 19: The rejection of claim 19 is as set forth above in claim 15 wherein the Applicants' specification further discloses that the filter assembly further comprises an adsorbent feature (page 18, line 5 through 20 and page 20, lines 4-5). See also See also Product Guidelines & Specifications Adsorbent Breather Filter (ABF).

Claim 20: The rejection of claim 20 is as set forth above in claim 15 wherein Herdeg et al. disclose a fuel cell operably connected to mobile equipment, which has been construed as a portable fuel cell that obviously would have a weight of no greater than 2 kg.

Response to Arguments

Applicants' arguments filed 6 September 2006 have been considered but are not persuasive.

A. Applicants' Specification is Not Prior Art Against Itself

The Applicants argue, "...the specification of the present application does not constitute prior art against itself. The Examiner rejected each of the pending claims as obvious over references in combination with the Applicants' own specification. However, it is basic that an inventor's application cannot serve as prior art against itself."

In response, the Applicants disclose on page 18, line 22 through page 19, line 5 *commercially available* filter assemblies (for use with computer disk drives) wherein the filter assemblies are commercially available from Donaldson Company, Inc. under the designations "Adsorbent Breather Filter", or "ABF", and under the designation "Adsorbent Breather Filter Assembly" or "ABF". This disclosure has been construed as an admission of prior art, and that the filter assemblies were commercially available prior to the application priority date.

B. There is No Suggestion or Motivation to Combine References.

The Applicants argued on page 6 that "the filters referenced in Applicants' specification are configured for use in computer disk drives. The description of the filters provided in the Donaldson Product Guidelines & Specifications is directed toward unique aspects of the application to a computer disk drive, such as instructions on locating the "filter to cover as close

Art Unit: 1745

as possible to the spindle.” This description would not teach or suggest to a person skilled in the art of fuel cells the application or configuration of the filter for use with a portable fuel cell.”

In response, WO 02/22234 discloses “a filter assembly further for filtering the intake air used in low temperature reactants, such as fuel cells” (page 2, lines 30-31). “The filter assembly captures and retains particulate and or chemical contaminants that can harm the catalytic process. In one embodiment, a filter assembly is provided that can capture and temporarily retain the chemical contaminants, releasing the contaminants when the incoming dirty air has levels of these contaminants are below the accepted level” (page 3, lines 4-11) “The chemical filter portion typically includes a physisorbent or chemisorbent material, such as, for example desiccants (i.e. materials that adsorb or absorb water or water vapor. Suitable absorbent materials include, for example, activated carbon, activated carbon fibers...”(page 8, lines 19-25) “Alternatively, the absorbent material can be shaped into a monolithic or unitary for...” (page 9, lines 5-12. “Further information regarding mold release, other additives, and molding techniques are disclosed in U.S. Patent No. 5,876,487.” (page 11, lines 17-30)

The Examiner has construed this disclosure of WO 02/22234 as providing a suggestion of humidity control via the capture and release of water or water vapor such that the filterer clean air has an acceptable level of moisture, and wherein the filter assembly is the same as or similar to that disclosed in U.S. Patent ‘487. Further, this provides a suggestion to a person of skill in the art of fuel cells the application or configuration of the filter for use with a portable fuel cell.

The Applicants Product Guidelines & Specifications ABA and ABF disclose in a similar problem solving area (i.e. humidity control) commercially available filter assemblies comprising a particulate removal, chemical adsorbent, and a water buffer feature constructed and configured

Art Unit: 1745

so that water vapor, from the cathode, is managed by the water buffer feature to achieve a desired humidity level. See also Product Guidelines & Specifications Adsorbent Breather Assembly (ABA).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the filter assembly with the filter assembly of the Applicants' specification because both are concerned with filtering particulates and gases (e.g. water or water vapor) from incoming air and the Applicants teach a commercially available filter assembly that would have provided protection from particulates, hydrocarbons, acid gases, and the effects of water vapor such as condensation and corrosion, and would have controlled humidity thereby improving the overall performance, efficiency and life of the fuel cell.

C. All Claim Limitations Are Not Disclosed in the Prior Art

The Applicants argue on page 7, "The prior art references do not disclose certain limitations present in the pending claims that are meaningful in the context of portable device". In particular the applicants appear to be arguing that the filter assembly is not in or on the fuel cell.

In response, it would have been within the skill of one having ordinary skill in the art at the time the invention was made have rearranged or relocated to filter assembly of the prior art in or on the fuel cells so long as the two are in fluid communication.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1745

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas H. Parsons whose telephone number is (571) 272-1290. The examiner can normally be reached on M-F (7:00-4:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thomas H Parsons
Examiner
Art Unit 1745



PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER